Life forms

Mediawatch: **Bernard Dixon** looks at reaction to the latest announcement from the J. Craig Venter Institute.

Newspaper headline writers are much vilified. They not only use racy language to attract our attention but sometimes also misunderstand and thus misrepresent the stories they are flagging. Yet headlines, invariably composed against pressing deadlines, can also show considerable skill in summarising news in few words to fit the available space.

"Synthetic life? Synthetic hysteria more like" (*The Times,* 22 May) is one recent example. It headed an article by Raymond Tallis, former professor of geriatric medicine at Manchester University, about the latest batch of media proclamations over the past 40 years that scientists have created life in the laboratory. The subject this time was the announcement in *ScienceExpress* (www.sciencemag.org/cgi/content/abstract/science.1190719) from the J. Craig Venter Institute in Rockville, Maryland, and San Diego, California of the transfer of a chemically synthesised *Mycoplasma mycoides* genome into *M. capricolum*.

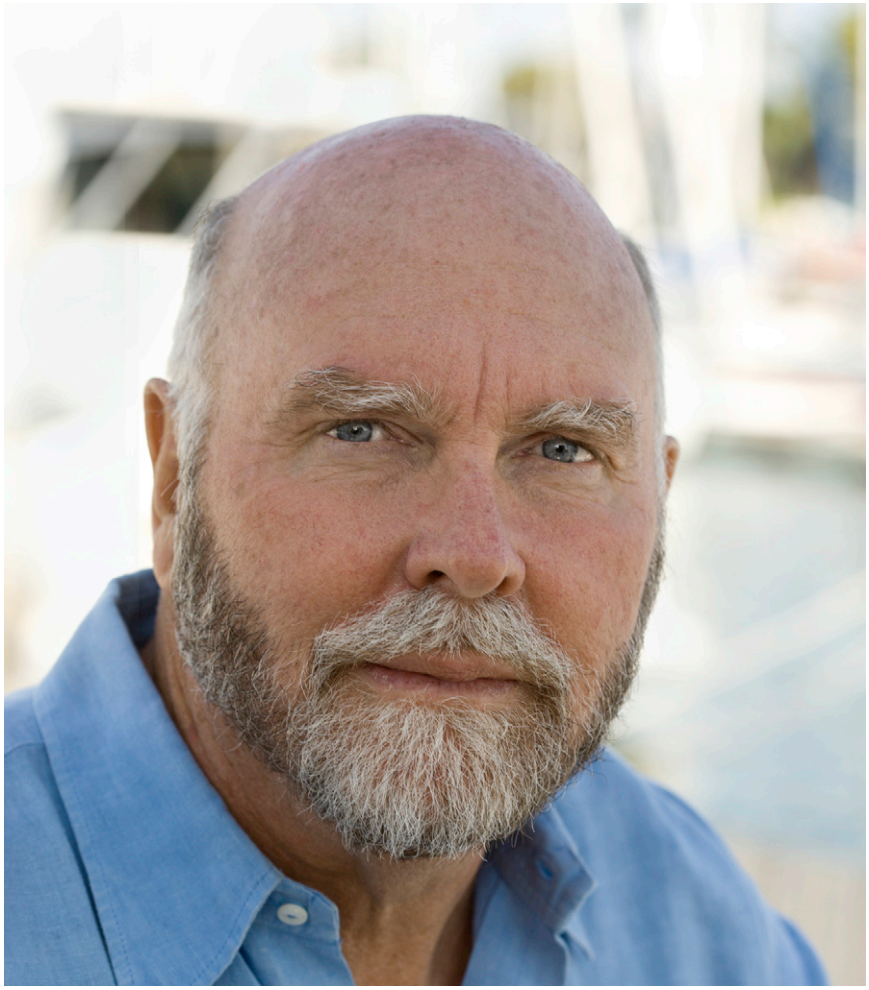
The sensationalism Tallis had in mind was typified by a piece headed "Doc Creates Life — 'Frankenstein' grows DNA to bring cell back from the dead" in *The Sun* (21 May). "A scientist has created life in a pioneering laboratory experiment in which a bug was 'brought back from the dead'... Opponents of genetic engineering condemned the experiment as dangerous Frankenstein-style tampering with nature," wrote Health and Science Editor Emma Morton.

After saying that artificial microbes might make vaccines and combat pollution, Ms Morton left readers with considerable confusion over alleged dangers of the work. "Other experts fear the technology could create biological weapons," she wrote. "Professor Paul Freemont, of Imperial College, London, called it 'a landmark study'. He said: 'This is a key step in the industrialisation of synthetic biology, leading to a new era'. Dr Eckard Wimmer of Stony Brook University, New York, warned: 'The possibility of misuse exists'. And Dr David King, of Human Genetics Alert, said scientists were 'playing God'. Dr Venter insisted the bacterium used is found in cows, not people. But a relative of it causes pneumonia in humans."

The *Daily Mail*'s front page on the same day announced "Artificial Life Created In Lab... Ethical storm as maverick scientist makes a synthetic cell." Science reporter Fiona MacRae reported that researchers were being accused of "tampering with the essence of life" and "creaking open the most profound door in humanity's history – with unparalleled risks".

In a second, less alarming article, science editor Michael Hanlon countered the page one allegation that Venter had "made a synthetic cell from scratch". According to Hanlon, "it is not yet clear if Venter can negotiate the final step — creating a whole cell from scratch, using no bits of existing living organisms at all." As regards dire warnings from other commentators, "his bacterium is likely to be weak and feeble; we are a long way from synthetic super-plagues, and even further from an artificial animal or plant."

Meanwhile, *The Independent*'s entire front page revealed, in menacing type, that: "After 15 years of trying, a controversial scientist has made an artificial, living cell. The implications for the future of humanity are so huge as to be scarcely imaginable." By comparison, an inside article by science editor Steve Connor was both balanced and accurate. Alongside a graphic illustrating precisely what Venter had and had not done, Connor wrote: "The research opens the way for scientists to create new life forms



Headlines: Craig Venter's latest venture into 'synthetic life' attracted widespread interest. (Photo: Evan Hurd/J. Craig Venter Institute.)

that can be genetically programmed to carry out a variety of functions, such as producing carbon-free fuel or made-to-order vaccines and providing new forms of food and clean water. However, the study also raises ethical concerns about the technology falling into the wrong hands, and, for instance being used to make biological weapons."

The weirdest criticism came from a scientist, Tom Wakeford of Newcastle University. "Like the myth that GM crops would feed the world, SynBio's myth-making could lead the UK government to waste billions by ignoring wider questions as to the societal purpose and realism of such new technologies," Wakeford ranted. "Venter's announcement may also bring Prince Charles's fear of the planet being taken over by 'grey goo' a step closer. The gunk would be an unstoppable 21st century version of John Wyndham's triffids."

Venter himself, asked by Steve Connor whether he was concerned about misuse of the new technology, gave this answer: "We have to be concerned. It's a powerful technology and I've proposed new regulations in this field because I feel the existing ones don't go far enough. Because we're inventors and developers of this, we want to see everything that can be done to prevent misuse of the technology. I've proposed regulating the companies that synthesise DNA, to screen [the DNA being synthesised] against harmful agents, and we've given feedback on improving those screens and being more rigorous. I've been briefing Congress on this. We don't want people taken by surprise…"

Craig Venter could be immensely frustrated when interviewed by journalists, such as BBC *Newsnight*'s Kirsty Wark on 20 May, who seem to believe that he is unaware of and/or unbothered about the practical and ethical implications of his work. Only environmentalists, bioethicists, reporters and self-appointed activists, it appears, understand and care about possible misapplications. But, on second thoughts, Venter — described by *The Sunday Times* (23 May) as of "a man of supreme immodesty" — can probably cope with this sort of thing.

Bernard Dixon is the European editor of the American Society for Microbiology.

Crystal depth

Victorian glass sea models form part of a new exhibition at the Natural History Museum in London to celebrate the creatures that inhabit the depths of the oceans, one of the least-known habitats in the world. The Deep, which opened last month, uses electronic imagery, real specimens and life-size interactive installations so that visitors can see creatures from the abyss in unprecedented detail. One of the highlights of the show is a sperm whale skeleton on show for the first time. The remains of these creatures form part of an important deep-sea ecosystem. "We want to tell the story of the weird creatures that live on a whale carcass for up to 50 years," says Alex Griffin, the museum's exhibition designer.

Filigree: Delicate glass structures depicting amoeba created in the nineteenth century are on display as part of a new show about the ocean abyss: *The Deep*, at London's Natural History Museum. (Photo: Natural History Museum).